

National Assessment of Educational Progress [NAEP] Results — 1994 and 1998

California Compared to Nation

California/Nation 1994			California/Nation 1998	
GR 4	Gr 8*		GR 4	GR 8
56/41		below basic	52/39	36/28
44/59		at or above basic	48/60	64/69
18/28		at or above proficient	20/29	22/30
3/7		at or above advanced	4/6	1/2
Average Scale Score 197/212			Average Scale Score 202/215 253/261	

*Note: The 1994 NAEP reading assessments, state-by-state, were conducted at grade 4 only.

DEFINITIONS

of NAEP Achievement Levels

Below Basic	This level identifies little or no mastery of knowledge and skills necessary to perform work at each grade level.
Basic	This level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade.
Proficient	This level represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject matter knowledge, application of such knowledge to real world situations, and analytical skills appropriate to the subject matter.
Advanced	This level signifies superior performance.

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

Table 1A: Grade 4 Reading Achievement

NAEP 1992 and 1994 (Public Schools Only)

	1992 Assessment		1994 Assessment	
	Percent of Students Below Basic*		Percent of Students Below Basic*	
	California	Nation	California	Nation
Parent's Education Level				
Graduated College	39	32	46	32
Some Education after H.S.	47	32	46	32
Graduated High School	55	44	63	46
Did Not Finish High School	75	62	84	68
I Don't Know	62	46	63	49
Race/Ethnicity				
White	35	30	41	31
Black	71	68	69	70
Hispanic	74	58	78	67
Asian	—	—	45	23
Pacific Islander	—	—	42	37
American Indian	—	48	—	53
Gender				
Male	57	44	59	47
Female	48	35	52	36

SOURCE: NAEP 1994 Reading Report Card for the Nation and the States (January 1996). This table examines and compares the results for groups of students defined by shared demographic characteristics or responses to background questions and does not include an analysis of the relationships between combinations of these groups.

*Below Basic: Identifies little or no mastery of knowledge and skills necessary to perform work at each grade level.

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Table 1B: Grade 4 and 8 Reading Achievement

NAEP 1998 (Public Schools Only)

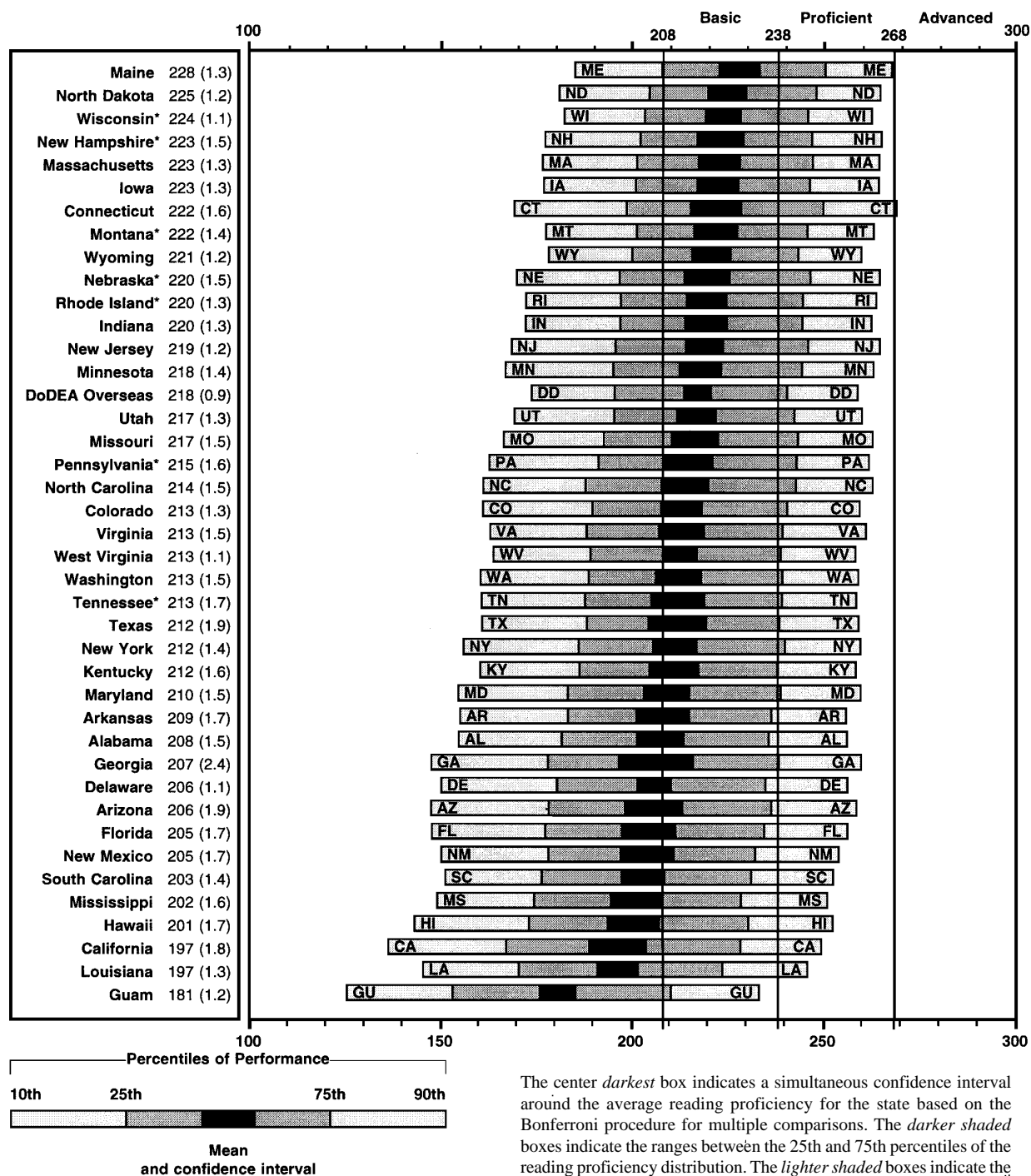
	Grade 4		Grade 8	
	Percent of Students Below Basic*		Percent of Students Below Basic*	
	California	Nation	California	Nation
Parent's Education Level				
Graduated College			22	18
Some Education after H.S.			21	20
Graduated High School	Information not reported in 1998	Information not reported in 1998	47	36
Did Not Finish High School			53	49
I Don't Know			62	51
Race/Ethnicity				
White	38	28	18	19
Black	67	65	48	50
Hispanic	71	62	52	48
Asian - Pacific Islander	39	34	28	20
American Indian	NA	55	NA	39
Gender				
Male	56	43	40	35
Female	48	36	32	21
Eligibility for Free or Reduced-Price Lunch (Poverty Index)				
Eligible	72	58	56	44
Not Eligible	37	28	20	20
No Information	40	30	33	25

SOURCE: NAEP 1998 Reading Report Card for the Nation and the States. This table examines and compares the results for groups of students defined by shared demographic characteristics or responses to background questions and does not include an analysis of the relationships between combinations of these groups.

*Below Basic: Identifies little or no mastery of knowledge and skills necessary to perform work at each grade level.

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

Figure 1: Distribution of Overall Reading Proficiency Organized by Average Proficiency for the 1994 Trial State Reading Assessment, Grade 4, Public Schools Only

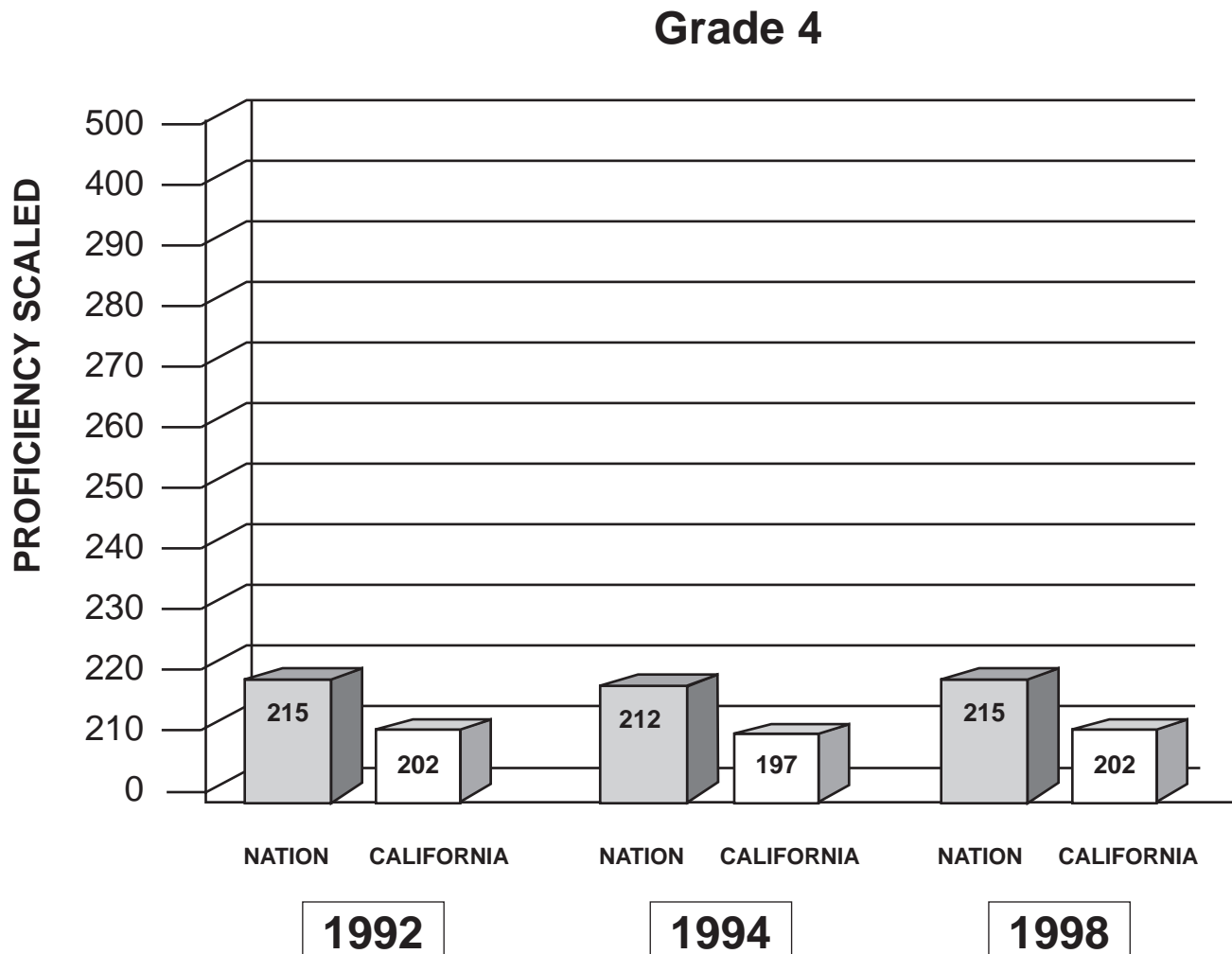


Source: NAEP 1994 Reading Report Card for the Nation and the States (1996)

*Did not satisfy one or more of the guidelines for sample participation rates.

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

**Figure 2: Overall National and California Reading Proficiency —
NAEP 1992, 1994, and 1998
Average Scale Score**



Significant decrease between 1992 and 1994

Source: NAEP 1994 Reading Report Card for the Nation and the States (1996)

Summary of Research Findings from NICHD research program

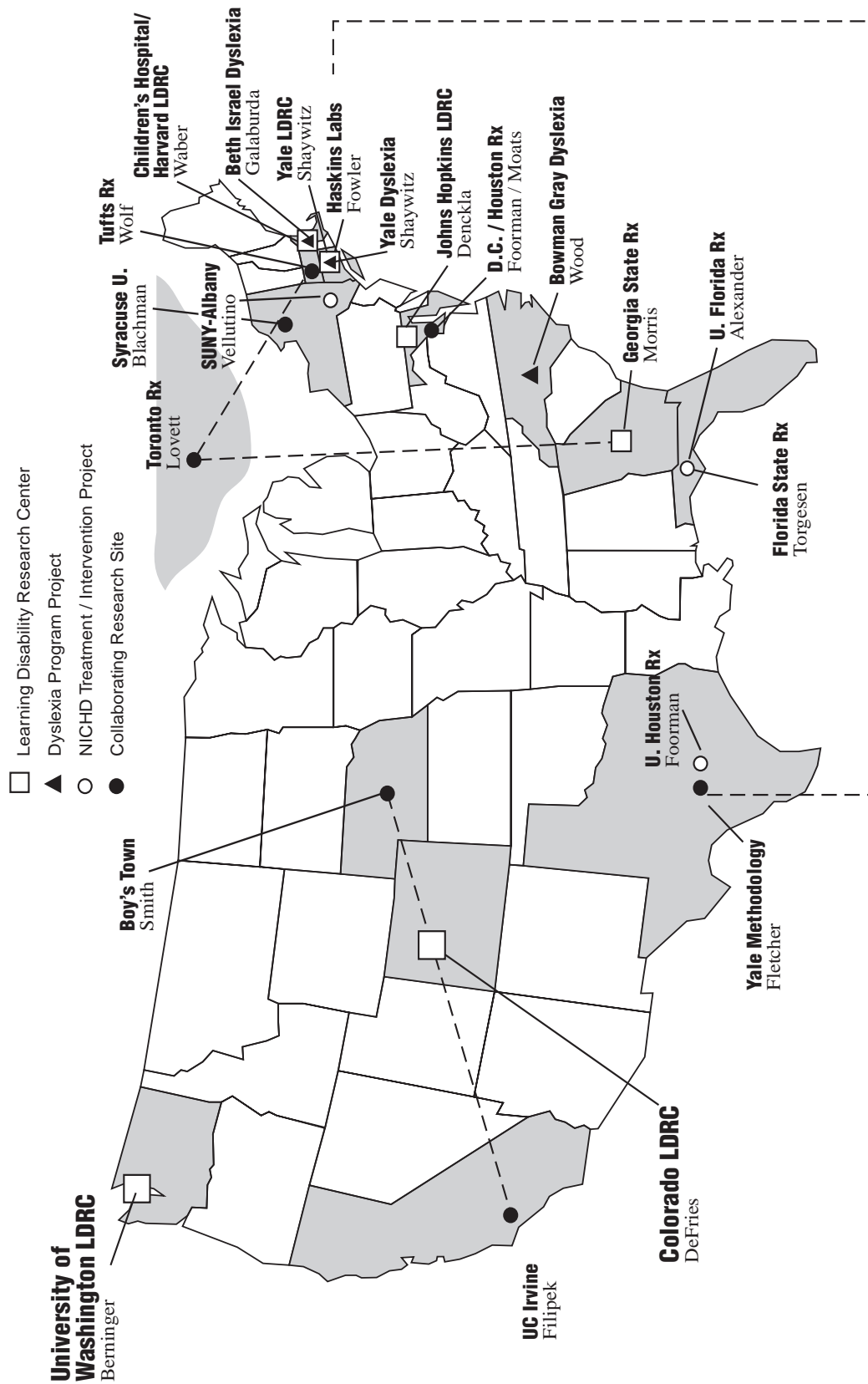
(From Lyon, 1995a, 1996)

Table 1. Major Findings From NICHD-Supported Research Programs

Research Domain	Findings	Research Group
Definition of Learning disabilities	A definition must be developed within a longitudinal developmental perspective unbiased by a prior assumptions reflected in current definitions. Exclusionary definitions using discrepancy criteria appear invalid, particularly in the area of basic reading skills.	Bowman Gray School of Medicine, Yale University Yale University, Ontario Institute for Studies in Education
Reading and language-related processes	Reading disabilities affect at least 10 million children in the United States. Epidemiologic studies indicate as many females as males manifest dyslexia; however, schools identify four times as many boys as girls. Reading disabilities reflect a persistent deficit rather than a developmental lag. Longitudinal studies show that of those children who are reading disabled in the third grade, approximately 74% remain disabled in the ninth grade. Distinguishing between disabled readers with and without an IQ-achievement discrepancy appears invalid. Children with and without discrepancies show similar information processing, genetic, and neurophysiologic profiles. Children with reading disability differ from one another <i>and</i> from other readers along a continuous distribution. They <i>do not</i> aggregate together to form a distinct “hump” separate from the normal distribution. The ability to read and comprehend depends on rapid and automatic recognition and decoding of single words. Slow and inaccurate decoding are the best predictors of deficits in reading comprehension. The ability to decode single words accurately and fluently is dependent on the ability to segment words and syllables into phonemes. Deficits in phonologic awareness reflect the core deficit in dyslexia.	Yale University Bowman Gray School of Medicine, University of Colorado, Yale University Yale University, Ontario Institute for Studies in Education University of Colorado, Bowman Gray School of Medicine, Yale University, Ontario Institute for Studies in Education Yale University, Bowman Gray School of Medicine, University of Colorado, Ontario Institute for Studies in Education Yale University, Bowman Gray School of Medicine, University of Colorado, Johns Hopkins School of Medicine Yale University, University of Colorado, Bowman Gray School of Medicine, University of Miami, Johns Hopkins School of Medicine
Attention	The best predictor of reading ability from kindergarten and first-grade performance is phoneme segmentation ability. A precise classification of disorders of attention is not yet available. A classification methodology that assesses internal and external validity of dimensional and categorical models must be applied to this issue. Disorders of attention and reading disability often coexist, but the two disorders are distinct and separable. Disorders of attention occur more frequently and exacerbate the severity and cognitive morbidity of reading disabilities. Because disorders of attention and reading disabilities often co-occur, more males are typically identified as reading disabled, spuriously inflating the sex ratio in favor of males	Bowman Gray School of Medicine, Yale University Yale University Bowman Gray School of Medicine, Yale University Bowman Gray School of Medicine, University of Miami
Genetics	A multiple regression procedure has been developed that allows for the analysis of the genetic etiology of individual differences in component language and reading skills. This methodology can assess differential genetic and environmental effects.	University of Colorado

Research Domain	Findings	Research Group
Neuroanatomy, neurophysiology, neuroimaging	There is strong evidence for genetic etiology of reading disabilities, with deficits in phonologic awareness reflecting the greatest degree of heritability.	University of Colorado
	There appears to be at least one type of reading disability that can be linked to the HLA region of chromosome 6, reflecting a possible association with autoimmune disorders.	University of Colorado, University of Miami
	Several types of brain pathology, including microdysgenesis (ectopias), cell loss, and abnormalities of the corpus callosum are present in a number of strains of mice. There is a similarity between the brain lesions seen in the mouse model and in humans with dyslexia.	Beth Israel Hospital and Harvard Medical School
	At the microscopic level, atypical neural organization in dyslexic individuals is suggested by absence of the normal left-greater-than-right asymmetry in the region of the posterior temporal planum.	Beth Israel Hospital and Harvard Medical School
	The phenotypic expression in dyslexia is related to anomalous organization of tissue and processing systems subserved within the posterior left hemisphere.	Beth Israel Hospital and Harvard Medical School, Bowman Gray School of Medicine
Intervention	Regional blood studies indicate that deficiency in word recognition skills is associated with less-than-normal activation in the left temporal region.	Bowman Gray School of Medicine
	PET studies indicate that dyslexic adults have greater-than-normal activation in the occipital and prefrontal regions of the cortex.	University of Miami
	Disabled readers do not readily acquire the alphabetic code due to deficits in phonologic processing. Thus, disabled readers must be provided highly structured programs that explicitly teach application of phonologic rules to print.	Bowman Gray School of Medicine
	Longitudinal data indicate that systematic phonics instruction results in more favorable outcomes for disabled readers than does a context-emphasis (whole-language) approach.	Bowman Gray School of Medicine
	Children at risk for reading failure learn to read words more fluently and accurately if they are explicitly taught phoneme awareness and sound-symbol relationships.	University of Houston, Florida State, University of Colorado, University of New York at Albany
	Instruction in phonology does not generalize to better text comprehension spontaneously; children also need to be taught how to read fluently and comprehend the meaning of what they read.	Florida State, Houston, University of Colorado
	Phoneme awareness is a necessary, but not sufficient condition for learning to read.	Florida State, Houston, University of Colorado
	Some children remain poor readers even after 80 hours of intensive 1-1 instruction. The most severely impaired readers need long term, expert intervention.	Florida State

NICHD LD and Reading Research Network



CHARACTERISTICS OF RELIABLE RESEARCH

- **RESULTS CAN BE REPLICATED**

At least several, sometimes many, studies find the same result.

- **FINDINGS CAN BE GENERALIZED**

The studies are controlled enough to document cause-effect relationships with specific types of people.

- **SCIENTIFIC METHOD USED**

Hypotheses are generated on the basis of what is already known; the experiment is designed to disprove the hypothesis. Y is varied to measure the effect on X.

- **RIGOROUS STANDARDS MET**

The study design, execution, and interpretation have undergone rigorous peer review.

- **CONVERGENT FINDINGS**

Results make sense in light of findings from other related disciplines; for example, in reading, research on speech processing, the brain, and eye movements help explain why certain instructional practices are effective.

An Overview of The Program Advisory, *Teaching Reading*¹

Four Organizing Principles or Themes

◆

“This program advisory suggests that explicit skills instruction be part of a broader language-rich program consistent with the best practices of literature-based instruction and the *English-Language Arts Framework*.”
(p. 4)

◆

The focus of the document is on
“early reading instruction”
(p. 3)
and
“early reading program(s)”
(p. 4)

◆

“Any changes... to improve... reading instruction...should be informed by current research.” (p. 4)

◆

“A balanced and comprehensive approach to reading...”
(p. 3)

An Organizational Framework for the Instructional Components of Early Reading

“...a (broad) language-rich program” (p. 4)

“a strong literature, language, and comprehension program that includes a balance of oral and written language” (p. 3)

<u>“an organized explicit skills program”</u> (p. 3) (decoding)	<u>“vocabulary development”</u> (pp. 9-10)	<u>“comprehension and higher-order thinking”</u> (pp. 10-11)
<ul style="list-style-type: none"> • “phonemic awareness” (pp. 4-5) <ul style="list-style-type: none"> - definition: an awareness of the smallest units of sound in spoken words - importance: a strong predictor of first grade success and necessary for understanding the alphabetic nature of reading and writing and for using phonics - components and instruction • “letter names and shapes” (pp. 5-6) <ul style="list-style-type: none"> - importance - instruction • “systematic, explicit phonics” (pp. 6-8) <ul style="list-style-type: none"> - automatic word recognition in skilled readers - the importance of attending to letters and letter patterns rather than context when developing automatic word recognition - the nature of systematic, explicit phonics instruction (spelling-sound relationships directly taught, a few at a time, practice in blending (and segmentation), application to decodable text, high-frequency sight words also taught) • “spelling” (pp. 8-9) <ul style="list-style-type: none"> - importance (writing, reading fluency, vocabulary development) - diagnostic uses (phonics and phonemic awareness) - formal spelling instruction + support for temporary spelling - begin with short, regular words as part of phonics and phonemic awareness instruction; then go on to more complex patterns 	<ul style="list-style-type: none"> - the <u>conceptual meanings</u> of words, (and topics, too) - importance in written language in the upper grades - the majority of new words are learned from context while reading widely - instruction: encourage attention to meanings of new words; start instruction early; definitions plus uses in a variety of contexts 	<ul style="list-style-type: none"> - 2 levels of comprehension: literal versus reflective, purposeful understanding; - reading fluency and vocabulary knowledge are necessary - direct, explicit instruction in formal syntax and comprehension strategies - the single most valuable activity; <u>reading</u>

appropriate instructional materials (p. 11)

- big books (concepts of print), instructional, independent and read-alouds (to open literary worlds)

diagnostic tools and intervention (pp. 18-19)

- assess fluency and comprehension (and word identification strategies) 3-4 times a year in K-2
- emphasize early intervention by mid-first grade with the first level involving classroom-based help
- second, more intense level of intervention by well-trained specialists

¹The Program Advisory, *Teaching Reading: A Balanced Comprehensive Approach to Teaching Reading in PreKindergarten through Grade Three*, California State Department of Education, 1996.

DEFINITION OF DYSPLEXIA

(This is a research or working definition that undoubtedly will be modified as more research results accumulate. It was approved by the Research Committee of the Orton Dyslexia Society and the National Institutes of Child Health and Human Development in the fall of 1995. See Lyon, 1995, for full elaboration and explanation of the definitional terms and why they were included.)

Dyslexia is one of several distinct learning disabilities.

It is a specific, language-based disorder of constitutional origin characterized by difficulties with single word decoding, usually reflecting insufficient phonological processing abilities.

These difficulties in single word decoding are often unexpected in relation to age and other cognitive academic abilities; they are not the result of generalized developmental disability or sensory impairment.

Dyslexia is manifest by variable difficulty with different forms of language, often including, in addition to problems reading, a conspicuous problem acquiring proficiency in writing and spelling.

INTEGRATED SYSTEMS FOR REMEDIATING READING/SPELLING DISABILITY

	Training Centers	Publishers
Project Read (Enfield and Greene)	The Carroll School Baker Bridge Rd. Lincoln, MA 01773 (617) 259-8342	Language Circle P.O. Box 20631 Bloomington, MN 55420 612-884-4880
Words (M. Henry); Patterns for Reading and Spelling		Pro-Ed 8700 Shoal Creek Austin, TX
Orton-Gillingham	The Orton-Gillingham Academy PO Box 234 Amenia, NY 12501-0234 914-373-8919	Educators Publishing Service 31 Smith Place Cambridge, MA 02138 1(800)225-5750
Wilson Language Training	Barbara Wilson 162 West Main Street Milbury, Ma 01527-1943 800-899-8454	
Auditory Discrimination in Depth (A.D.D.)	Lindamood-Bell 416 Higuera St. San Luis Obispo, CA 93401 805-541-3836	Riverside, Chicago, IL Pro-Ed, Austin, TX
Language! (J. Greene)	Sopris West 1140 Boston Avenue Longmont, CO 80501	Basics Plus 921 Aris Avenue, Suite C Metairie, LA 70005

(These and other programs are described in D. Clark and J. Uhry, (1995) *Dyslexia: Theory and Practice of Remedial Instruction*, 2nd Edition. Baltimore, MD: York Press.)

For more information, contact the Orton Dyslexia Society, Chester Building/Suite 382, 8600 LaSalle Road, Baltimore, Maryland 21286-2044; In California: Orange County Branch, 714-999-0118; Central California Branch, 408-659-7653; Northern California Branch, 415-328-7667; San Diego Branch, 619-295-3722; Los Angeles Branch 818-506-8866; Inland Empire Branch 909-686-9837. For Teacher Preparation: International Multisensory Structured Language Education Council, 1118 Lancaster Drive N.E., Suite 346, Salem, OR 97301-2933;

SUGGESTED READINGS ON LANGUAGE, READING, AND SPECIFIC LEARNING DISABILITIES FOR THE LAY PERSON

1. *Beginning to Read: Thinking & Learning About Print*
Marilyn Jager Adams. A Summary. Prepared by The Reading Research & Education Center, University of Illinois at Urbana-Champaign, 1990.
2. *Intimacy With Language: A Forgotten Basic in Teacher Education*
The Orton Dyslexia Society, Baltimore, MD. 1987.
3. *All Language and the Creation of Literacy*
The Orton Dyslexia Society, Baltimore, MD. 1990.
4. *Dyslexia: Theory & Practice of Remedial Instruction, 2nd Ed.*
D.B.Clark and J. Uhry. Baltimore, MD: York Press. 1995.
5. *Keeping A Head in School: A Student's Book About Learning Abilities & Learning Disorders*
Mel Levine, Educators Publishing Service, Cambridge, MA. 1990
6. *About Dyslexia*
Priscilla L. Vail. Modern Learning Press/Programs for Education. 1990.
7. *Readings for Parents: Selected Reprints on Dyslexia*
The Reprint Series, The Orton Dyslexia Society, Baltimore, MD.
8. *Turnabout Children: Overcoming Dyslexia & Other Learning Disabilities*
Mary MacCracken. Signet Books (Nal Penguin, Inc.). New York, NY. 1986.
9. *What's Wrong with Me?*
Regina Cicci. Baltimore: York Press. 1995.
10. *No One to Play With: The Social Side of Learning Disabilities*
Betty B. Osman. Random House. Reprinted 1989

VIDEO RESOURCE for Teacher Preparation and Public Awareness:

Learning Abilities/Learning Disabilities

Vineyard Video Productions, PO Box 370, West Tisbury, MA 02575-0370 (1-800-664-6119)

Tape 1: Introduction

Tape 2: The Teaching: What LD Students Need

Tape 3: Reading is Not a Natural Skill: Teaching Children the Code to Unlock Language

Tape 4: Children and Parents

Tape 5: ADD/ADHD/LD: Understanding the Connection

Tape 6: Math Teaching for Children with Learning Disabilities